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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,203	11/21/2003	David Monroe Bell	GCSD-1461 (51330)	1976
27975 7590 12/11/2007 ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791			EXAMINER NGUYEN, CUONG H	
			ART UNIT 3661	PAPER NUMBER
			NOTIFICATION DATE 12/11/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

creganoa@addmg.com

**Office Action Summary**

Application No.

10/719,203

Applicant(s)

BELL ET AL.

Examiner

CUONG H. NGUYEN

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/14/07 (the RCE).  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-25 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 11/21/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

*DETAILED ACTION*

1. This Office Action is the answer to the RCE's amendment received on 11/14/07 which paper has been placed of record in the file.
2. Claims 1-25 are pending in this application.

*Response*

3. The amendment was not made as expected; a meaning of "configuring to" (as claimed) must show concise, fully, and clearly evidences of that task (i.e., configuring includes of hardware structuring and software/firmware collaborations); upon checking all evidences giving by the applicants to support for claimed "configured to" (11/23/07 REMARK and previous papers) the examiner does not find above claimed "configured to" sufficiently shown in the disclosed specification, and in said Fig.1. (the applicants need to show "how" it is configured according to independent claims 1, 11, and 19) (adding "configured to" MAY NOT MAKE SIMILAR TEACHING in cited art of Sakuma et al. but NOT in prior art (i.e., the examiner may not use 35 USC 102 rejections). The applicants claim about a system to collect data as it travels along a road; the examiner's position is that claimed system is still the same (it clearly MUST BE, at least its structure and components do not change) whether it is stationery or it is moving along a road; therefore, the examiner maintains previous rejections – note that in a claimed phrase such as "a down-looking line scan camera for mounting on a vehicle to obtain a series of line scan images of the road as the vehicle travels there along", "for mounting on a vehicle to obtain a series of line scan images of the road as the vehicle travels there along" is merely an intent of use for a system such as claim 1; therefore, this is not "a down-looking line scan camera" limitation (the recitation of a new intended use

for an old product does not make a claim to that old product patentable - *in re Schreiber*, 44 USPQ2d 1429 (Fed. Cir. 1997)).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2, 8, 19, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131)

A. As per claims 1, and 19: Sakuma et al. teach a data collection system comprising: a positioning system to generate position and time data; a line scan camera for mounting on a vehicle to obtain a series of line scan images (see Sakuma et al., Fig.1 ref. 108-109, Fig. 25, Fig. 26 ref. 3411-3412, and the abstract – note that “a down-looking line scan camera” is structural constructed exactly as a cited line scan camera); and a data collection controller connected to the positioning system and the line scan camera to associate line scan images with corresponding position and time data (see Sakuma et al., Fig. 26 ref. 3402, 3404 ).

Sakamura et al. do not disclose a down-looking line scan camera mounted on the vehicle to obtain a series of line scan images of the road (note that “to obtain a series of line scan images of the road” is inherently a characteristic of Sakamura/Martin ‘s camera.

However, Martin teaches that limitation (see Martin, col. 1 lines 35-57); and a data collection controller, carried by the vehicle and connected to the positioning system and the line scan camera to associate line scan images with corresponding position and time data, the data collection controller comprising an image processor to identify and mark road features in the line scan images.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Martin’s teaching with Sakuma et al.’s line scanning camera for using the Martin’s specific camera to obtain data while traveling along a road because this kind of specific camera is known for taking line scanning pictures.

B. As per claim 19: The method that comprises steps to obtain claim 1 results by making/using claim 1’s system are obvious with Sakuma et al.’s teaching because the applicants merely claim steps that use a line scan camera for road-centerline data collection.

C. As per claims 2, and 21: Sakuma et al. also use a database to store line scan images and corresponding data (e.g. accumulated positions, and time data) may be stored in MEMORY IMAGE 103 in FIG.1.

D. As per claims 8, and 25: Sakura also teaches a display device connected to a data collection controller to display line scan images (see Sakura et al., Fig.1 ref. 104).

5. Claims 5-6, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131).

The rationales and reference for rejection of claim 1 are incorporated.

Sakamura et al. teach a mobile road-centerline data collection and processing system comprising: a vehicle for traveling along a road; a positioning system carried by the vehicle to generate position and time data.

Sakamura et al. do not disclose a down-looking line scan camera with an attached wide-angle lens (i.e., fish eye lens are vvery wide angle lens with a bulging glass outer element) mounted on the vehicle to obtain a series of line scan images of the road.

However, Martin teaches that limitation (see Martin, col. 1 lines 35-57); and using a data collection controller, carried by a vehicle and connected to a positioning system and a line scan camera to associate line scan images with corresponding position and time data, the data collection controller comprising an image processor to identify and mark road features in the line scan images.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Martin's teaching with Sakuma et al.'s line scanning camera for using the Martin's approach for the advantage of using fish-eye lens to collect data, and using the desired output picture element in the input memory buffer (they are calculated); and memorized input data are sequenced through as directed by filtering/correcting calculations.

6. Claims 3, 9-10, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131), and in view of Kimura (US Pub. 2001/0056326 A1).

The rationales and reference for rejection of claim 1 are incorporated.

A. As per claim 3: Sakuma et al. do not disclose about using a GPS.

However, Kimura suggests that idea (see Kimura, Fig. 2 “GPS Receiver 23”).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Sakuma et al. and Martin ’s teachings with Kimura’s suggestion to obtain positions of related location by an available GPS because that has been a common source to obtain accurate geographical data.

B. As per claims 9, and 20: The rationales and reference for rejection of claim 1 are incorporated.

Kimura also suggests that an image processor identifies/detects/determines and mark/select a recorded road feature (e.g., a line scan image), (see Kimura, para. [0075].

C. As per claim 10: The rationales and references for rejection of claim 1 are incorporated.

Kimura also suggests that an image processor identifies/determine road edges for storing (see Kimura, Figs. 14-15, para. [0075], and a lane marker detector 14).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131), in view of Kimura (US Pub. 2001/0056326 A1), and in view of Bennett (US Pat. 6,747,686).

The rationales and references for rejection of claim 3 are incorporated.

Sakuma et al., Martin, and Kimura do not disclose an Inertial Navigation System.

However, Bennett discloses a positioning system for a line scan camera to collect necessary data comprises an Inertial Navigation System (INS) (see Bennett, col. 10 lines 39-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the teachings of Sakuma et al., Martin, and Kimura with

Bennett to disclose a positioning system comprises an Inertial Navigation System for an advantage of using an available type of dead-reckoning navigational system, which is based on measurement of vehicle's accelerations.

8. Claims 7, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131), in view of Kimura (US Pub. 2001/0056326 A1), further in view of Migdal et al. (US Pat. 5,995,650).

The rationales and reference for rejection of claim 1 are incorporated.

Sakuma et al., Martin, and Kimura's references do not disclose a controller comprises: a central processing unit (i.e., CPU or processor), and a frame grabber.

However, Migdal et al. suggest that idea (see Migdal et al., col. 12 line 58 to col. 13 line 23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the teachings of Sakuma et al., Martin, and Kimura with Migdal et al. to suggest a controller comprises a central processing unit and a frame grabber for the advantage of using a video controller having a frame grabber which enables the controller to accept collected images of video information and process it.

9. Claims 11-13, and 15-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131), and in view of Kimura (US Pub. 2001/0056326 A1).

The rationales and reference for rejection of claim 1 are incorporated.



A. As per claim 11: This claim is directed to a mobile data collection system, all the limitations in claim 11 are made by incorporating limitations from claims 1, 5, and 9; therefore, rationales and references for rejection of those claims are incorporated.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Martin and Kimura 's teachings with Sakuma et al.'s line scanning camera for a digital line scan camera having an attached wide-angle lens, and an image processor to identify and mark road features in the line scan images for an advantage of using a well-known and conventional distortion correcting calculations for used image processor.

B. As per claim 12: Sakuma et al. also use a database to store line scan images and corresponding data (e.g. accumulated positions, and time data) may be stored in MEMORY IMAGE 103 in FIG.1.

C. As per claim 13: Sakuma et al. do not disclose about using a GPS.

However, Kimura suggests that idea (see Kimura, Fig. 2 "GPS Receiver 23").

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Sakuma et al., and Martin 's teachings with Kimura's suggestion to obtain positions of related location by an available GPS for the advantage of using a known reliable source for obtaining position data.

D. As per claim 15: The rationales and reference for rejection of claim 11 are incorporated.

Sakuma et al. do not disclose a digital line scan camera and an attached wide-angle lens.

However, Martin teaches that limitation (as above see Martin), and fish eye lens are wide angle lens as noted above (claims 5-6, and 11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Martin's teaching with Sakuma et al.'s line scanning camera for a digital line scan camera having an attached wide-angle lens for an advantage of using a well-known and conventional distortion correcting calculations.

E. As to claim 16: The rationales and reference for rejection of claim 11 are incorporated.

Sakamura et al. teach a mobile road-centerline data collection and processing system comprising: a vehicle for traveling along a road; a positioning system carried by the vehicle to generate position and time data (see Sakuma et al., Fig.1 ref. 108-109, Fig. 25, Fig. 26 ref. 3411-3412, and the abstract).

Sakamura et al. do not expressly disclose a down-looking line scan camera with an attached wide-angle lens (i.e., fish eye lens are very wide angle lens with a bulging glass outer element) mounted on the vehicle to obtain a series of line scan images of the road.

However, Martin teaches that limitation (see Martin, col. 1 lines 35-57); and a data collection controller, carried by the vehicle and connected to the positioning system and the line scan camera to associate line scan images with corresponding position and time data, the data collection controller comprising an image processor to identify and mark road features in the line scan images (note that these limitations are already obvious in cited references).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Martin's teaching with Sakuma et al.'s line scanning camera

for using the Martin's approach for the advantage of using fish-eye/wide angle lens to collect data, and using the desired output picture element in the input memory buffer (they are calculated); and memorized input data are sequenced through as directed by distortion correcting/filtering calculations.

F. As per claim 18: Sakura also teaches a display device connected to the data collection controller to display the line scan images (see Sakura et al., Fig.1 ref. 104).

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Kimura (US Pub. 2001/0056326 A1), in view of Martin (US Pat. 6,243,131), and in view of Bennett (US Pat. 6,747,686).

The rationales and references for rejection of claim 13 are incorporated.

Sakuma et al., Martin, and Kimura do not disclose an Inertial Navigation System.

However, Bennett discloses a positioning system for a line scan camera to collect necessary data comprising an Inertial Navigation System (INS) (see Bennett, col. 10 lines 39-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the teachings of Sakuma et al., Martin and Kimura with Bennett to discloses a positioning system comprises an Inertial Navigation System for an advantage of using an available type of dead-reckoning navigational system, which is based on measurements of vehicle's accelerations.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al. (US Pat. 6,766,038), in view of Martin (US Pat. 6,243,131), in view of Kimura (US Pub. 2001/0056326 A1), further in view of Migdal et al. (US Pat. 5,995,650).

The rationales and reference for rejection of claim 11 are incorporated.